WO 2005/068505

| <110> | HUR, Man-Wook |
|---|---|
| <120> | FUSION PROTEIN COMPRISING TATOMT POLYPEPTIDE |
| <160> | 22 |
| <170> | KopatentIn 1.71 |
| <210> | 1 |
| <211> | 36 |
| <212> | DNA |
| <213> | Artificial Sequence |
| <220> | |
| <223> | Forward primer for Constructs 2-1 and 2-2 PCR |
| <400> | 1 |
| acgtaagc | tt accatggcgc cgacctcctg gaccgg 36 |
| | |
| <210> | 2 |
| <210> , | 2 31 |
| , | |
| <211> <212> | 31 |
| <211> <212> | 31 DNA |
| <211> <212> <213> | 31 DNA |
| <211> <212> <213> | 31 DNA Artificial Sequence |
| <211> <212> <213> <223> <400> | 31 DNA Artificial Sequence Reverse primer for constructs 2-1 and 2-2 PCR |
| <211> <212> <213> <223> <400> | 31 DNA Artificial Sequence Reverse primer for constructs 2-1 and 2-2 PCR |
| <211> <212> <213> <220> <223> <400> gatcgaat | DNA Artificial Sequence Reverse primer for constructs 2-1 and 2-2 PCR 2 acc ggcgagtccg gctgtgaagt t 31 |
| <211> <212> <213> <220> <223> <400> gatcgaate | DNA Artificial Sequence Reverse primer for constructs 2-1 and 2-2 PCR 2 2 2 2 2 2 3 3 |
| <211> <212> <213> <220> <223> <400> gatcgaate <210> <211> | DNA Artificial Sequence Reverse primer for constructs 2-1 and 2-2 PCR 2 to ggogagtog gotgtgaagt t 31 3 34 |

```
<223>
        Reverse primer for Constructs 3-1 and 3-2 PCR
<400>
                                                                         34
gatcgaattc cgggctgggg tcgggcgccc cgcc
<210>
        4
<211>
        33
<212>
        DNA
<213>
        Artificial Sequence
<220>
<223>
        Forward primer for Constructs 4-1 or 5-1, 2
<400>
                                                                         33
acgtaagctt accatggggg acagcgacga gtc
<210>
        5
<211>
        31
<212>
        DNA
<213>
        Artificial Sequence
<220>
<223>
        Reverse primer for constructs 4-1 or 5-1, 5-2
<400>
                                                                         31
gatcgaattc ggcgagtccg gctgtgaagt t
<210>
         6
<211>
         33
<212>
         DNA
<213>
        Artificial Sequence
<220>
<223> Forward primer for 4-12FC PCR
```

| <400> | 6 | |
|----------|----------------------------------|----|
| acgtaago | tt accatggggg acagcgacga gtc | 33 |
| | | |
| | | |
| <210> | 7 | |
| <211> | 37 | |
| <212> | DNA | |
| <213> | Artificial Sequence | |
| | • | |
| <220> | | |
| <223> | Forward primer for PCR ZF only | |
| | | |
| | | |
| <400> | 7 . | |
| acgtaagc | tt accatggaga aggtggagaa gatccga | 37 |
| | | |
| | | |
| <210> | 8 | |
| <211> | 31 | |
| <212> | DNA | |
| <213> | Artificial Sequence | |
| | | |
| <220> | | |
| <223> | Reverse primer for PCR ZF only | |
| | | |
| | | |
| <400> | 8 | |
| acgtaagc | tt cgaggggacg ccgttgcagc c | 31 |
| | | |
| | | |
| <210> | 9 | |
| <211> | 130 | |
| <212> | PRT | |
| <213> | Artificial Sequence | |
| | | |
| <220> | | • |
| <223> | POZ-Domain | |

PCT/KR2004/000117

<400> 9 Met Ala Gly Gly Val Asp Gly Pro Ile Gly Ile Pro Phe Pro Asp His Ser Ser Asp Ile Leu Ser Gly Leu Asn Glu Gln Arg Thr Gln Gly Leu 25 Leu Cys Asp Val Val Ile Leu Val Glu Gly Arg Glu Phe Pro Thr His 40 Arg Ser Val Leu Ala Ala Cys Ser Gln Tyr Phe Lys Lys Leu Phe Thr 55 Ser Gly Ala Val Asp Gln Gln Asn Val Tyr Glu Ile Asp Phe Val 70 75 Ser Ala Glu Ala Leu Thr Ala Leu Met Asp Phe Ala Tyr Thr Ala Thr 85 90 Leu Thr Val Ser Thr Ala Asn Val Gly Asp Ile Leu Ser Ala Ala Arg 105 Leu Leu Glu Ile Pro Ala Val Ser His Val Cys Ala Asp Leu Leu Asp 120 Arg Gln 130 <210> 10 <211> 73 <212> PRT <213> Artificial Sequence <220> <223> TatdMt polypeptide <400>

Met Glu Pro Val Asn Pro Ser Leu Glu Pro Trp Lys His Pro Gly Ser 5 Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Ala Lys Cys Phe 25 30 His Cys Gln Val Cys Phe Ile Thr Lys Ala Leu Gly Ile Ser Tyr Gly 40 Arg Ala Lys Arg Arg Gln Arg Arg Pro Pro Gln Gly Ser Gln Thr His Gln Val Ser Leu Ser Lys Leu Ile 70 65 <210> 11 <211> 106 <212> PRT <213> Artificial Sequence <220> <223> AZF39 <220> <221> SIGNAL <222> (4)..(11) <223> NLS(Nuclear Localization Signal) <400> Met Glu Leu Pro Pro Lys Lys Lys Arg Lys Val Gly Ile Arg Ile Pro 5 Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro 35 45

Sequence Listing

Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu 50 55 Arg Arg His Gly Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Lys 65 Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr 90 · 85 Arg Thr His Thr Gly Glu Lys Ala Ala Ala 105 <210> 12 <211> 106 <212> PRT <213> Artificial Sequence <220> <223> AZF40 <220> <221> SIGNAL <222> (4)..(11) <223> NLS(Nuclear Localization Signal) Met Glu Leu Pro Pro Lys Lys Lys Arg Lys Val Gly Ile Arg Ile Pro 1 Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg 20 25 Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro 40 45 Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu

| 50 | | 55 | | | | 60 | | | | | | |
|----------|-------------|------------|---------|--------|-------|------|------|------|------|-------|---|-----|
| Arg Arg | His Gly Ar | Thr His | Thr G | lv Glu | Lvs | Pro | Phe | Gl n | Cve | Tara | | |
| 65 | • | 70 | | -, | 75 | | 0 | 0111 | cys | 80 | | |
| | | | | | | | | | | | | |
| Thr Cys | Gln Arg Lys | Phe Ser | Arg Se | er Asp | His | Leu | Lys | Thr | His | Thr | | |
| | 85 | | | 90 | | | | | 95 | | | |
| | | | | | | | | | | | | |
| Arg Thr | His Thr Gly | Glu Lys | Ala Al | la Ala | | | | | | | | |
| | 100 | | 10 |)5 | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| <210> | 13 | | | | | | | | | | | |
| <211> | 318 | | | | | | | | | | | |
| <212> | DNA | | | | | | | | | | | |
| <213> | Artificial | . sequence | е | | | | | | | | | |
| <220> | | | | | | | | | | | | |
| <223> | AZF39 | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| <400> | 13 | | | • | | | | | | | | |
| atggaatt | gc ctccaaaa | aa gaaga | gaaag g | taggga | tcc | gaat | tccc | gg g | gaaa | aaccg | ſ | 6(|
| | | | | | | | | | | | | |
| ttccagto | ta aaacttgt | ca gcgaaa | agttc t | cccggt | ccg | acca | cctg | aa g | accc | acacc | | 120 |
| | | | | | | | | | | | | |
| aggactca | ta ccggggaa | aa accgta | ataaa t | gtaagc | aat | gtgg | gaag | gc t | tttg | gatgt | | 180 |
| | | | | | | | | | | | | |
| ccctcaaa | cc ttcgaagg | ca tggaag | gact c | acaccg | ggg | aaaa | accg | tt c | cagt | gtaaa | | 240 |
| | | | | | | | | | | | | |
| acttgtca | gc gaaagttc | te eeggte | cgac c | acctga | aga (| ccca | cacc | ag g | actc | atacc | | 300 |
| ~~+~~~~ | | | | | | | | | | | | |
| ggugaaa | ag cggccgca | | | | | | | | | | | 318 |
| | | | | | | | | | | | | |
| <210> | 14 | | | | | | | | | | | |
| <211> | 318 | | | | | | | | | | | |
| <212> | DNA | | | | | | | | | | | |
| <213> | Artificial | Sequence | | | | | | | | | | |
| | | | | | | | | | | | | |

| <220> | | | | | | |
|-----------|---------------|------------|------------|------------|------------|-----|
| <223> | AZF40 | | | | | |
| | | | | | | |
| | | | • | | | |
| <400> | 14 | | | | | |
| atggaatt | oc ctccaaaaaa | gaagagaaag | gtagggatcc | gaattcccgg | ggaaaaaccg | 60 |
| | | | | | | |
| ttccagtgt | a aaacttgtca | gcgaaagttc | teceggteeg | accacctgaa | gacccacacc | 120 |
| | | | | | | |
| aggactcat | a ccggggaaaa | accgtataaa | tgtaagcaat | gtgggaaggc | ttttggatgt | 180 |
| | | | | | | |
| ccctcaaac | c ttcgaaggca | tggaaggact | cacaccgggg | aaaaaccgtt | ccagtgtaaa | 240 |
| | | | | | | |
| acttgtcag | c gaaagttctc | ccggtccgac | cacctgaaga | cccacaccag | gactcatacc | 300 |
| | | | | | | |
| ggtgaaaaa | g cggccgca | | | | | 318 |
| | | | | | | |
| | | | | | | |
| | 15 | | | | | |
| | 219 | | | | | |
| | DNA | | | | | |
| <213> | Artificial Se | equence | | | | |
| | | | | | | |
| <220> | | | | | | |
| <223> | TatdMT | | | | | |
| | | | | | | |
| -400 | | | | | | |
| | 15 | | | | | |
| arggagcca | g taaatcctag | cctagagccc | tggaagcatc | caggaagtca | gcctaaaact | 60 |
| | | | | | | |
| gcttgtacc | a attgctattg | tgcaaagtgt | tgctttcatt | gccaagtttg | tttcataaca | 120 |
| | | | | | | |
| aagcctta | g gcatctccta | tggcagggca | aagcggagac | agcgacgaag | acctcctcaa | 180 |
| | | | | | | |
| ycagtcag. | a ctcatcaagt | ttctctatca | aagctgatc | | | 219 |
| | | | | | | |
| (210> | 1.0 | | | | | |
| -210- | 16 | | | | | |

<211>

<212>

390

DNA

| <213> | Artifi | cial S | equenc | e | | | | | | | | | | |
|-----------|---------|---------|--------|-------|-------|-------|------|-----|------|-----|------|------|-----|----|
| <220> | | | | | | | | | | | | | | |
| <223> | P0%-D0 | main | | | | | | | | | | | | |
| | -, | Marie I | | | | | | | | | | | | |
| <400> | 16 | | | | | | | | | | | | | |
| atggccggc | g gegt | ggacgg | cccca | tcggg | ato | cccg. | ttcc | ccg | acca | cag | cagc | gaca | atc | 6 |
| ctgagtggg | gc tgaa | cgagca | gcgga | cgcag | ggo | cctg | ctgt | gcg | acgt | ggt | gatc | ctgg | ıtg | 12 |
| gagggccgc | g agtt | cccac | gcacc | gctcg | gto | gctg | gccg | cct | gcag | cca | gtac | ttca | ag | 18 |
| aagctgttc | a cgtc | gggcgc | cgtgg | tggac | cag | gcaga | aacg | tgt | acga | gat | cgac | ttcg | rtc | 24 |
| agcgccgag | | | | | | | | | | | | | | 30 |
| acagccaac | | | | | | cgc | ctgc | tgg | agat | ccc | cgcc | gtga | ge | 36 |
| cacgtgtgc | g ccga | cctcct | ggacc | ggcag | | | | | | | | | | 39 |
| | | | | | | | | | | | | | | |
| <210> | 17 | | | | | | | | | | | | | |
| <211> | 181 | | | | | | | | | | | | | |
| <212> | PRT | | | | | | | | | | | | | |
| <213> | Artifi | cial S | equenc | е | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| <220> | | | | | | | | | | | | | | |
| <223> | AZF39-7 | ratdMt | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| <400> | 17 | | | | | | | | | | | | | |
| fet Glu L | eu Pro | Pro Ly | s Lys | Lys A | Arg | Lys | Val | Gly | Ile | Ara | Ile | Pro | | |
| 1 | | 5 | - | - | _ | 10 | | | | 3 | 15 | | | |
| | | | | | | | | | | | | | | |
| Sly Glu L | ys Pro | Phe Gl | n Cys | Lys T | Chr | Сув | Gln | Arg | Lys | Phe | Ser | Arg | | |
| | 20 | | | | 25 | | | | | 30 | | | | |
| er Asp H | is Leu | Lys Th | r His | Thr A | arg ' | Thr | His | Thr | Gly | Glu | Lys | Pro | | |
| : | 35 | | | 40 | | | | | 45 | | | | | |
| | | | | | | | | | | | | | | |

Sequence Listing

Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu 55 Arg Arg His Gly Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Lys 65 70 Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr 90 Arg Thr His Thr Gly Glu Lys Ala Ala Ala Asp Ile Met Glu Pro Val 100 105 110 Asn Pro Ser Leu Glu Pro Trp Lys His Pro Gly Ser Gln Pro Lys Thr 120 Ala Cys Thr Asn Cys Tyr Cys Ala Lys Cys Cys Phe His Cys Gln Val 135 140 Cys Phe Ile Thr Lys Ala Leu Gly Ile Ser Tyr Gly Arg Ala Lys Arg 150 155 Arg Gln Arg Arg Pro Pro Gln Gly Ser Gln Thr His Gln Val Ser 165 170 175 Leu Ser Lys Leu Ile 180 <210> 18 <211> 181 <212> PRT <213> Artificial Sequence <220> <223> AZF40-TatdMt

<400> 18

Met Glu Leu Pro Pro Lys Lys Lys Arg Lys Val Gly Ile Arg Ile Pro

| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------------|--------------------|------------|------------|------------|------------|
| Gly | Glu | Lys | Pro 20 | Phe | Gln | Cys | Lys | Thr 25 | Cys | Gln | Arg | Lys | Phe | Ser | Arg |
| Ser | Asp | His | Leu | Lys | Thr | His | Thr 40 | Arg | Thr | His | Thr | Gly 45 | Glu | Lys | Pro |
| Tyr | Lys 50 | Cys | Lys | Gln | Cys | Gly 55 | Lys | Ala | Phe | Gly | С у в 60 | Pro | Ser | Asn | Leu |
| Arg 65 | Arg | His | Gly | Arg | Thr 70 | His | Thr | Gly | Glu | Lys 75 | Pro | Phe | Gln | Cys | Lys 80 |
| Thr | Cys | Gln | Arg | Lys 85 | Phe | Ser | Arg | Ser | Asp 90 | His | Leu | Lys | Thr | His 95 | Thr |
| Arg | Thr | His | Thr 100 | Gly | Glu | Lys | Ala | Ala 105 | Ala | Asp | Ile | Met | Glu 110 | Pro | Val |
| Asn | Pro | Ser 115 | Leu | Glu | Pro | Trp | Lys 120 | His | Pro | Gly | Ser | Gln 125 | Pro | Lys | Thr |
| Ala | Суs 130 | Thr | Asn | Cys | Tyr | Cys 135 | Ala | Lys | Cys | Cys | Phe 140 | His | Cys | Gln | Val |
| Cys 145 | Phe | Ile | Thr | Lys | Ala 150 | Leu | Gly | Ile | Ser | Туr 155 | Gly | Arg | Ala | Lys | Arg 160 |
| Arg | Gln | Arg | Arg | Arg 165 | Pro | Pro | Gln | Gly | Ser 170 | Gln | Thr | His | Gln | Val 175 | Ser |
| Leu | Ser | Lys | Leu 180 | Ile | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| 210 | | 19 | | | | | | | | | | | • | | |
| 211 | | 313 | | | | | | | | | | | | | |
| 212 | | PRT | | | | | | | | | | | | | |
| 213 | > | Art | ific | ıal | Sequ | ence | | | | | | | | | |

| <pre><223></pre> | <22 | 0> | | | | | | | | | | | | | | |
|---|--------|-----|-------|------|------|------|-------------|-------------|----------|---------|-------------|------|------|-----|-------|-----------|
| Met Ala Gly Val Asp Gly Pro Ile Gly Ile Pro Asp His 1 1 2 5 5 1 10 7 Pro Phe Pro Asp His Ser Ser Asp Ile Leu Ser Gly Leu Val Glu Glu Fhe Pro Thr His Arg Ser Val Val Ile Leu Val Gly Arg Glu Phe Pro Thr His Arg Ser Val Leu Ala Ala Cys Ser Gln Tyr Phe Lys Leu Phe Thr Ser Gly Ala Val Arg Gln Gln Tyr Thr Ala Leu Hys Phe Ala Tyr Thr Ala Arg Arg Ile Leu Ser Ala | <22 | 3> | PO | Z-Do | main | -AZF | 39-т | atdM | t | | | | | | | |
| Met Ala Gly Val Asp Gly Pro Ile Gly Ile Pro Asp His 1 1 2 5 3 10 10 7 15 15 Ser Ser Asp Ile Leu Ser Gly Leu Asp Glu Fhe Pro Thr His Leu Cys Asp Val Val Ile Leu Val Glu Glu Pro Thr His Arg Ser Val Leu Ala Ala Cys Ser Gln Tyr Pro Lys Leu Pro Thr His Ser Gly Ala Val Asp Gln Gln Tyr Pro Lys Leu Pro Pro Pro Ala Arg Pro Ala Arg Arg Arg Arg Inc Arg Inc Arg Inc | | | | | | | | | | | | | | | | |
| Met Ala Gly Val Asp Gly Pro Ile Gly Ile Pro Asp His 1 1 2 5 3 10 10 7 15 15 Ser Ser Asp Ile Leu Ser Gly Leu Asp Glu Fhe Pro Thr His Leu Cys Asp Val Val Ile Leu Val Glu Glu Pro Thr His Arg Ser Val Leu Ala Ala Cys Ser Gln Tyr Pro Lys Leu Pro Thr His Ser Gly Ala Val Asp Gln Gln Tyr Pro Lys Leu Pro Pro Pro Ala Arg Pro Ala Arg Arg Arg Arg Inc Arg Inc Arg Inc | | | | | | | | | | | | | | | | |
| Met Ala Gly Val Asp Gly Pro Ile Gly Ile Pro Asp His 1 1 2 5 3 10 10 7 15 15 Ser Ser Asp Ile Leu Ser Gly Leu Asp Glu Fhe Pro Thr His Leu Cys Asp Val Val Ile Leu Val Glu Glu Pro Thr His Arg Ser Val Leu Ala Ala Cys Ser Gln Tyr Pro Lys Leu Pro Thr His Ser Gly Ala Val Asp Gln Gln Tyr Pro Lys Leu Pro Pro Pro Ala Arg Pro Ala Arg Arg Arg Arg Inc Arg Inc Arg Inc | <40 | ٥> | 19 | | | | | | | | | | | | | |
| 1 | | | | C1 | 17-1 | 7.00 | C1** | Dwa | T1. | c1 | -1 - | Dane | DL - | | _ | •• • - |
| Ser Ser Asp Ile Leu Ser Gly Leu Asn Glu Gln Arg Thr Gln Gly Leu 20 25 30 Leu Cys Asp Val Val Ile Leu Val Glu Gly Arg Glu Phe Pro Thr His 35 40 40 45 Arg Ser Val Leu Ala Ala Cys Ser Gln Tyr Phe Lys Lys Leu Phe Thr 50 55 60 Ser Gly Ala Val Val Asp Gln Gln Asn Val Tyr Glu Ile Asp Phe Val 65 70 75 80 Ser Ala Glu Ala Leu Thr Ala Leu Met Asp Phe Ala Tyr Thr Ala Thr 85 90 95 Leu Thr Val Ser Thr Ala Asn Val Gly Asp Ile Leu Ser Ala Ala Arg 110 100 105 110 Leu Leu Glu Ile Pro Ala Val Ser His Val Cys Ala Asp Leu Leu Asp 125 125 Arg Gln Gly Tyr Met Glu Leu Pro Pro Lys Lys Lys Arg Lys Val Gly 130 135 140 Ile Arg Ile Pro Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg 145 150 155 160 Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr 155 157 | | AIA | GIY | Сту | | Asp | GIY | PIO | 116 | | ITE | Pro | Pne | Pro | _ | Hls |
| Leu Cys Asp Val Val Ile Leu Val Glu Gly Arg Glu Phe Pro Thr His 35 | 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Leu Cys Asp Val Val Ile Leu Val Glu Gly Arg Glu Phe Pro Thr His 35 | | | | | | | | | | | | | | | | |
| Leu Cys Asp Val Val Ile Leu Val Glu Gly Arg Glu Phe Pro Thr His 35 | Ser | Ser | Asp | Ile | Leu | Ser | Gly | Leu | Asn | Glu | Gln | Arg | Thr | Gln | Gly | Leu |
| Arg Ser Val Leu Ala Cys Ser Gln Tyr Phe Lys Lys Leu Phe Thr Ser Gly Ala Val Val Asp Gln Gln Asp Tyr Phe Lys Lys Leu Phe Val Ser Gly Ala Val Val Asp Gln Asp Val Tyr Thr Ala Asp Me Asp Phe Ala Tyr Thr Ala Asp Asp Phe Ala Tyr Thr Ala Asp Phe Ala Asp Phe Ala Asp Asp Phe Ala Tyr Arg Arg Arg Inc Leu Arg Inc Inc Inc Arg Inc In | | | | 20 | | | | | 25 | | | | | 30 | | |
| Arg Ser Val Leu Ala Cys Ser Gln Tyr Phe Lys Lys Leu Phe Thr Ser Gly Ala Val Val Asp Gln Gln Asp Tyr Phe Lys Lys Leu Phe Val Ser Gly Ala Val Val Asp Gln Asp Val Tyr Thr Ala Asp Me Asp Phe Ala Tyr Thr Ala Asp Asp Phe Ala Tyr Thr Ala Asp Phe Ala Asp Phe Ala Asp Asp Phe Ala Tyr Arg Arg Arg Inc Leu Arg Inc Inc Inc Arg Inc In | | | | | | | | | | | | | | | | |
| Arg Ser Val Leu Ala Ala Cys Ser Gln Tyr Phe Lys Lys Leu Phe Thr 50 | Leu | Cys | Asp | Val | Val | Ile | Leu | Val | Glu | Gly | Arg | Glu | Phe | Pro | Thr | His |
| Ser Gly Ala Val Val Asp Gln Gln Asp Val Asp Gln Asp Val Tyr Glu Ile Asp Phe Val Ser Ala Glu Ala Leu Thr Ala Leu Met Asp Phe Ala Tyr Thr Ala Thr Ala Thr Ala Asp Val Gly Asp Ile Ala Tyr Ala Arg Arg Ala Thr Ala Asp Val Gly Asp Ile Leu Arg Ala Arg Info Arg | | | 35 | | | | | 40 | | | | | 45 | | | |
| Ser Gly Ala Val Val Asp Gln Gln Asp Val Asp Gln Asp Val Tyr Glu Ile Asp Phe Val Ser Ala Glu Ala Leu Thr Ala Leu Met Asp Phe Ala Tyr Thr Ala Thr Ala Thr Ala Asp Val Gly Asp Ile Ala Tyr Ala Arg Arg Ala Thr Ala Asp Val Gly Asp Ile Leu Arg Ala Arg Info Arg | | | | | | | | | | | | | | | | |
| Ser Gly Ala Val Val Asp Gln Gln Asp Val Asp Gln Asp Val Tyr Glu Ile Asp Phe Val Ser Ala Glu Ala Leu Thr Ala Leu Met Asp Phe Ala Tyr Thr Ala Thr Ala Thr Ala Asp Val Gly Asp Ile Ala Tyr Ala Arg Arg Ala Thr Ala Asp Val Gly Asp Ile Leu Arg Ala Arg Info Arg | Arq | Ser | Val | Leu | Ala | Ala | Cvs | Ser | Gln | Tvr | Phe | Lvs | Lvs | Leu | Phe | ጥኮዮ |
| Ser Gly Ala Val Val Asp Gln Gln Asn Val Tyr Glu Ile Asp Phe Val 65 | - | | | | | | | | | -1- | | | -1.5 | Lou | 1110 | |
| 65 10 Ala Leu Rhy Rouse 10 Ala Ray Phe Rouse Ala Tyr Thr Ala Thr 95 Ala Tyr Phe Rouse Ala Ray Phe Rouse Ala Tyr Phe Rouse Ala Ray Phe Rouse | | | | | | | | | | | | 00 | | | | |
| 65 10 Ala Leu Rhy | 60* | C1 | ח 1 ח | Wo I | 7707 | N | 61 - | 01 - | 3 | ·· - 7 | | | | _ | | |
| Ser Ala Glu Ala Leu Thr Ala Leu Met Asp Phe Ala Tyr Thr Ala Thr 95 Leu Thr Val Ser Thr Ala Asn Val Gly Asp 11e Leu Ser Ala Ala Arg 100 Leu Thr Val Ser Thr Ala Asn Val Gly Asp 11e Leu Ser Ala Ala Arg 110 Leu Leu Glu Ile Pro Ala Val Ser His Val Cys Ala Asp Leu Leu Asp 115 Arg Gln Gly Tyr Met Glu Leu Pro Pro Pro Lys Lys Lys Arg Lys Val Gly 130 Ile Arg Ile Pro Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg 160 Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr | | GIY | АТа | vai | Val | | GIU | GIN | ASN | vaı | | GIU | TIE | Asp | Phe | |
| Part Part | 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Part Part | | | | | | | | | | | | | | | | |
| Leu Thr Val Ser Thr Ala Asn Val Gly Asp Ile Leu Ser Ala Ala Arg 100 | Ser | Ala | Glu | Ala | Leu | Thr | Ala | Leu | Met | Asp | Phe | Ala | Tyr | Thr | Ala | Thr |
| Leu Leu Glu Ile Pro Ala Val Ser His Val Cys Ala Asp Leu Leu Asp Arg Gln Gly Tyr Met Glu Leu Pro Pro Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Ile Arg Ile Pro Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Arg Ile Pro Ile Arg Ile Ile Arg Ile Ile Arg Ile I | | | | | 85 | | | | | 90 | | | | | 95 | |
| Leu Leu Glu Ile Pro Ala Val Ser His Val Cys Ala Asp Leu Leu Asp Arg Gln Gly Tyr Met Glu Leu Pro Pro Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Ile Arg Ile Pro Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Arg Ile Pro Ile Arg Ile Ile Arg Ile Ile Arg Ile I | | | | | | | | | | | | | | | | |
| Leu Leu Glu Ile Pro Ala Val Ser His Val Cys Ala Asp Leu Leu Asp 115 | Leu | Thr | Val | Ser | Thr | Ala | Asn | Val | Gly | Asp | Ile | Leu | Ser | Ala | Ala | Arg |
| Arg Gln Gly Tyr Met Glu Leu Pro Pro Lys Lys Arg Lys Val Gly 130 130 135 135 140 1 | | | | 100 | | | | | 105 | | | | | 110 | | |
| Arg Gln Gly Tyr Met Glu Leu Pro Pro Lys Lys Arg Lys Val Gly 130 130 135 135 140 1 | | | | | | | | | | | | | | | | |
| Arg Gln Gly Tyr Met Glu Leu Pro Pro Lys Lys Arg Lys Val Gly 130 130 135 135 140 1 | Leu | Leu | Glu | Ile | Pro | Ala | Val | Ser | His | Val | Cys | Ala | Asp | Leu | Leu | Asp |
| Arg Gln Gly Tyr Met Glu Leu Pro Pro Lys Lys Lys Arg Lys Val Gly 130 | | | | | | | | | | | • | | | | | |
| 130 135 140 Ile Arg Ile Pro Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg 145 150 150 160 Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr | | | | | | | | | | | | | | | | |
| 130 | Ara | Gln | Glw | Фиг | Mo+ | Glu | T.Au | Bro | Dro | T *** 0 | T | T | 3 | T | *** 1 | 03 |
| Ile Arg Ile Pro Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg 145 | **** 9 | | GLY | -7- | Mec | GIU | | PIO | PIU | пур | пÀг | | ALG | гуз | vai | GTĀ |
| 145 150 155 160 Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr | | 130 | | | | | 135 | | | | | 140 | | | | |
| 145 150 . 155 160 Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr | | | | | | | | | | | | | | | | |
| Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr | Ile | Arg | Ile | Pro | Gly | Glu | Lys | Pro | Phe | Gln | Суз | Lys | Thr | Cys | Gln | Arg |
| | 145 | | | | | 150 | | • | | | 155 | | | | | 160 |
| | | | | | | | | | | | | | | | | |
| 165 170 175 | Lys | Phe | Ser | Arg | Ser | Asp | His | Leu | Lys | Thr | His | Thr | Arg | Thr | His | Thr |
| | | | | | 165 | | | | | 170 | | | | | 175 | |
| | | | | | | | | | | | | | | | | |
| Gly Glu Lys Pro Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys | Gly | Glu | Lys | Pro | Tyr | Lys | Cys | Lys | Gln | Cys | Gly | Lys | Ala | Phe | Gly | Cys |

Sequence Listing

180 185 190 Pro Ser Asn Leu Arg Arg His Gly Arg Thr His Thr Gly Glu Lys Pro 200 Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Ala Ala Asp Ile 230 235 Met Glu Pro Val Asn Pro Ser Leu Glu Pro Trp Lys His Pro Gly Ser 245 250 Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Ala Lys Cys Phe 265 His Cys Gln Val Cys Phe Ile Thr Lys Ala Leu Gly Ile Ser Tyr Gly 280 Arg Ala Lys Arg Arg Gln Arg Arg Pro Pro Gln Gly Ser Gln Thr 295 His Gln Val Ser Leu Ser Lys Leu Ile 310 <210> 20 <211> 313 <212> <213> Artificial Sequence <220> <223> POZ-Domain-AZF40-TatdMt <400> Met Ala Gly Gly Val Asp Gly Pro Ile Gly Ile Pro Phe Pro Asp His

10

| Ser | Ser | Asp | Ile | Leu | Ser | Gly | Leu | Asn | Glu | Gln | Arg | Thr | Gln | Gly | Leu |
|--------|-------|-------|---------|------|-----|-----------|------|------|------|------|------|-----------|-----------|----------|-------------------|
| | | | 20 | | | | | 25 | | | | | 30 | | |
| | | | | | | | | | | | | | | | |
| Leu | Cys | Asp | Val | Val | Ile | Leu | Val | Glu | Gly | Arg | Glu | Phe | Pro | Thr | His |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| | | | | | | | | | | | | | | | |
| Arg | Ser | Val | Leu | Ala | Ala | Cys | Ser | Gln | Tyr | Phe | Lys | Lys | Leu | Phe | Thr |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| | | | | | | | | | | | | | | | |
| Ser | Gly | Ala | Val | Val | Asp | Gln | Gln | Asn | Val | Tyr | Glu | Ile | Asp | Phe | Val |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| | | | | | | | | | | | | | | | |
| Ser | Ala | Glu | Ala | Leu | Thr | Ala | Leu | Met | Asp | Phe | Ala | Tyr | Thr | Ala | Thr |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| | | | | - | | | | | | | | | | | |
| Leu | Thr | Val | Ser | Thr | Ala | Asn | Val | Gly | Asp | Ile | Leu | Ser | Ala | Ala | Arg |
| | | | 100 | | | | | 105 | | | | | 110 | | - |
| | | | | | | | | | | | | | | | |
| Leu | Leu | Glu | Ile | Pro | Ala | Val | Sex | His | Val | Cys | Ala | Asp | Leu | Leu | Asp |
| | | 115 | | | | | 120 | | | - | | 125 | | | • |
| | | | | | | | | | | | | | | | |
| Arg | Gln | Gly | Thr | Met | Glu | Leu | Pro | Pro | Lvs | Lvs | Lvs | Ara | Lvs | Val | Glv |
| _ | 130 | _ | | | • | 135 | | | • | | 140 | 5 | | | 1 |
| | | | | | | | | | | | | | | | |
| Ile | Arg | Ile | Pro | Gly | Glu | Lys | Pro | Phe | Gln | Cvs | Lvs | Thr | Cvs | Gln | Ara |
| 145 | - | | | - | 150 | - | | | | 155 | -4 - | | -1- | | 160 |
| | | | | | | | | | | | | | | | 100 |
| Lys | Phe | Ser | Ara | Ser | Asp | His | Len | Lvs | Thr | His | ጥb r | Ara | Thr | Hio | መስ <mark>ም</mark> |
| - | | | 3 | 165 | | | | -1.0 | 170 | | | ··- y | | 175 | T11.I |
| | | | | | | | | | _,, | | | | | 1/3 | |
| Glv | Glu | Lvs | Pro | Tvr | Lvs | Cys | Tive | Gln | Cve | G) v | T.ve | פות | Dho | c1 | C |
| 1 | | _,_ | 180 | -,- | 2,5 | Cys | ny 3 | 185 | Cys | GIY | Буз | нта | | GTÀ | Cys |
| | | | | | | | | 103 | | | | | 190 | | |
| Pro | Ser | Δen | T.011 | Ara | Ara | His | C1** | N ~~ | mb ∽ | u: ~ | mb | ~1 | ~1 | T | |
| | 501 | 195 | пец | Arg | nrg | птэ | | Arg | THE | птъ | THE | | GIU | гÀг | Pro |
| | | x 7 0 | | | | | 200 | | | | | 205 | | | |
| Dha | Cln | Cvc | T *** C | | C | C1= | 3 | T | Db - | 0 | • | | _ | | _ |
| ~ 11.0 | 210 | cla | пÄя | THE | Cy5 | Gln | Arg | пλε | rne | ser | | ser | qzA | Hls | Ĺeu |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Tua | mh se | 17 d | mh | **** | ml | ** | -1 | •• | | _ | | | | | _ |
| пуя | THE | นาธ | THE | Arg | TUL | His | Thr | GTÀ | Glu | ьуs | Ala | Ala | Ala | Asp | Ile |

Sequence Listing

225 230 235 240 Met Glu Pro Val Asn Pro Ser Leu Glu Pro Trp Lys His Pro Gly Ser 245 250 Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Ala Lys Cys Phe 265 His Cys Gln Val Cys Phe Ile Thr Lys Ala Leu Gly Ile Ser Tyr Gly 280 Arg Ala Lys Arg Arg Gln Arg Arg Pro Pro Gln Gly Ser Gln Thr 295 300 His Gln Val Ser Leu Ser Lys Leu Ile 310 <210> 21 <211> <212> DNA <213> Artificial Sequence <220> <223> Forward primer for pcDNA3.0-artificial zinc-finger fusion TatdMt constructs <400> gatcggtacc atggaattgc ctccaaaaaa gaag 34 <210> 22 <211> 34 <212> <213> Artificial Sequence <220> Reverse primer for pcDNA3.0-artificial zinc-finger fusion TatdMt <223>

constructs

Sequence Listing

<400> 22

gatcgatatc tgcggccgct ttttcaccgg tatg

34